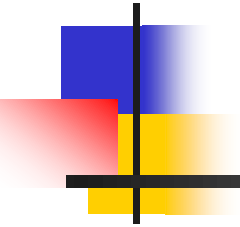


Leveraging IT for Government



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Agenda

- Why IT
- E-Government
- Government Process reengineering
- E-Office
- PFMS
- E-Procurement
- GIS
- Future Trends



WHY IT ?

- Efficiency
- Productivity
- Reach
- Sharing of information
- Service delivery
- Welfare



IT in Business orgns

1960s-70s	1980s	1990s	2003 +
Mainframes	PCs	Client Server	Enterprise
EDP	MIS Dept	IT	IT/IS
Functional support	Functional support + Decision support	As a source of comp. advantage	IT as an enabler of Business Strategy



Business value of IT

- IT for Operations essential for the Orgn to function- good ROI
 - Reduce cycle times
 - Improve customer service
 - Minimise stock-outs
- IT for decision support –an aid for faster and effective performance monitoring
- IT in areas of core competency can reinforce competitive advantage- e,g Dell
- IT standardises business processes



So what is E-Government?

- E-Government is the use of ICT and its application by the government for the provision of information and public services to the people
 - Source : Global E-Govt readiness report 2004

Why e-government?

"Its hype"

"Everyone else is doing it, so its probably important and useful"

"We don't want to fall behind all others"

"We think it will provide faster, more convenient government services"

"We think it will reduce costs for individuals and businesses to deal with government"

"We think it will reduce costs for government (reduced data entry costs, lower error rates)"

"To reduce corruption and fight poverty"

"We think it will improve democratic process"

"We think it's a tool for transformation of public administration from bureaucracy to service provider"

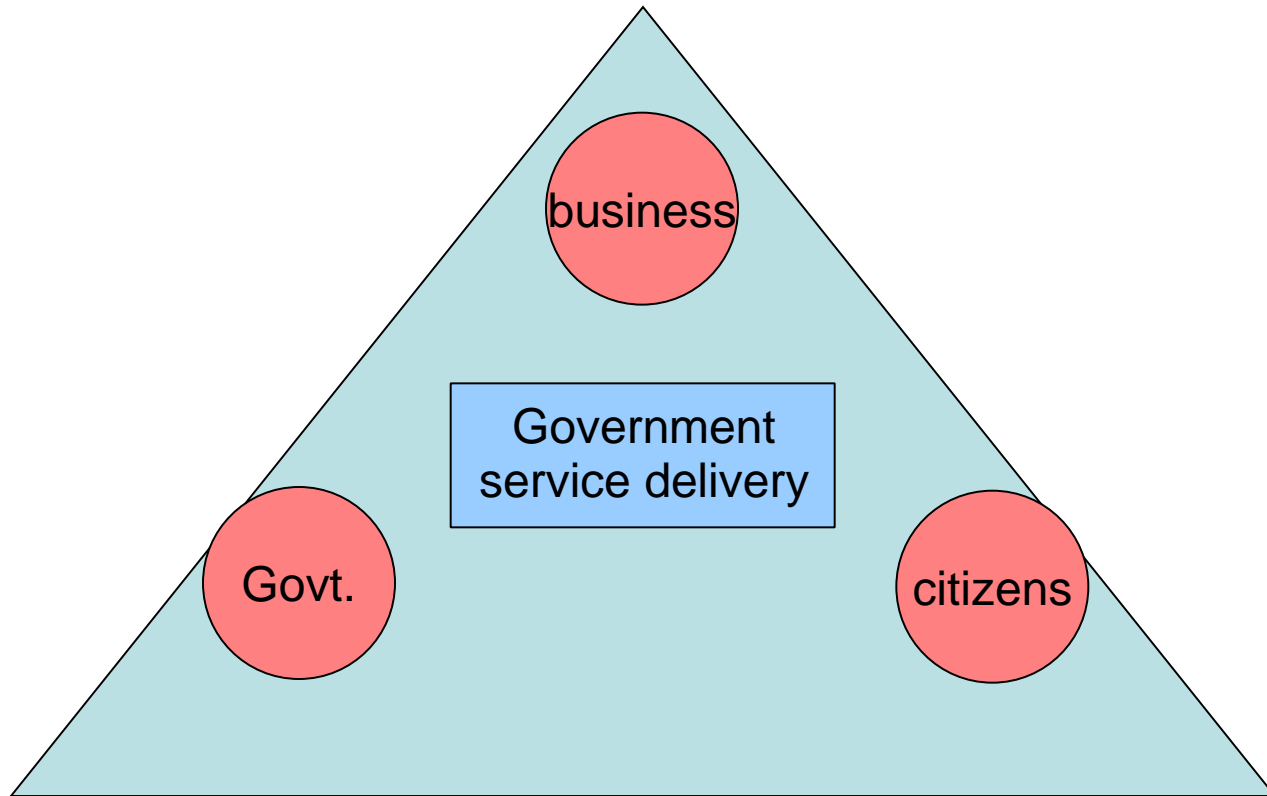
"We need to reach out to a broader part of population"



Govt Process Reengineering

- Form simplification and field reduction
- Online applications and tracking
- Online repositories
 - Certificates
 - Identity documents
 - Educational degrees
- Integration of services and platforms
 - Payments
 - Service delivery between state and centre

E-Government target agents



Introduction to eOffice

A Digital Workplace
Solution in Government
offices

Establish a Single Product
for reuse in the
Government

eOffice

Initiated in 2009.
Developed and
Implemented by National
Informatics Centre (NIC)

Based on Central
Secretariat Manual of e-
Office Procedure
(CSMeOP)



Why eOffice?

- An average document is photocopied 19 times
- Paper files get doubled every 3.5 years
- Paper usage in an average office grows 22 percent a year and doubles every 3.3 years
- Every 12 filing cabinets require an additional employee to maintain them
- The average search time for any document is 18 minutes and some are never found
- At any given time, 3-5 percent of an organization's files are lost or misplaced
- Large organizations lose/misplace a document every 12 seconds
- 92 percent of information is in manila folders
- Almost half of an office's time is spent handling paper/data entry
- 80 percent of today's information is paper based
- The average time to retrieve and file a paper document is 10 minutes
- E-mail causes an average 40 percent increase in paper consumption
- 12,500 sheets of paper can be made from one tree
- A letter has to pass through 41 steps and entered in dozens of the registers before it is answered

Source: *Green IT Initiative, A paper by Shri. Virendra Singh (IAS – Maharashtra) on eOffice Implementation in Sindhudurg District of Maharashtra.*



eOffice – Benefits



Enhance transparency



Increase accountability



Assure data security and data integrity

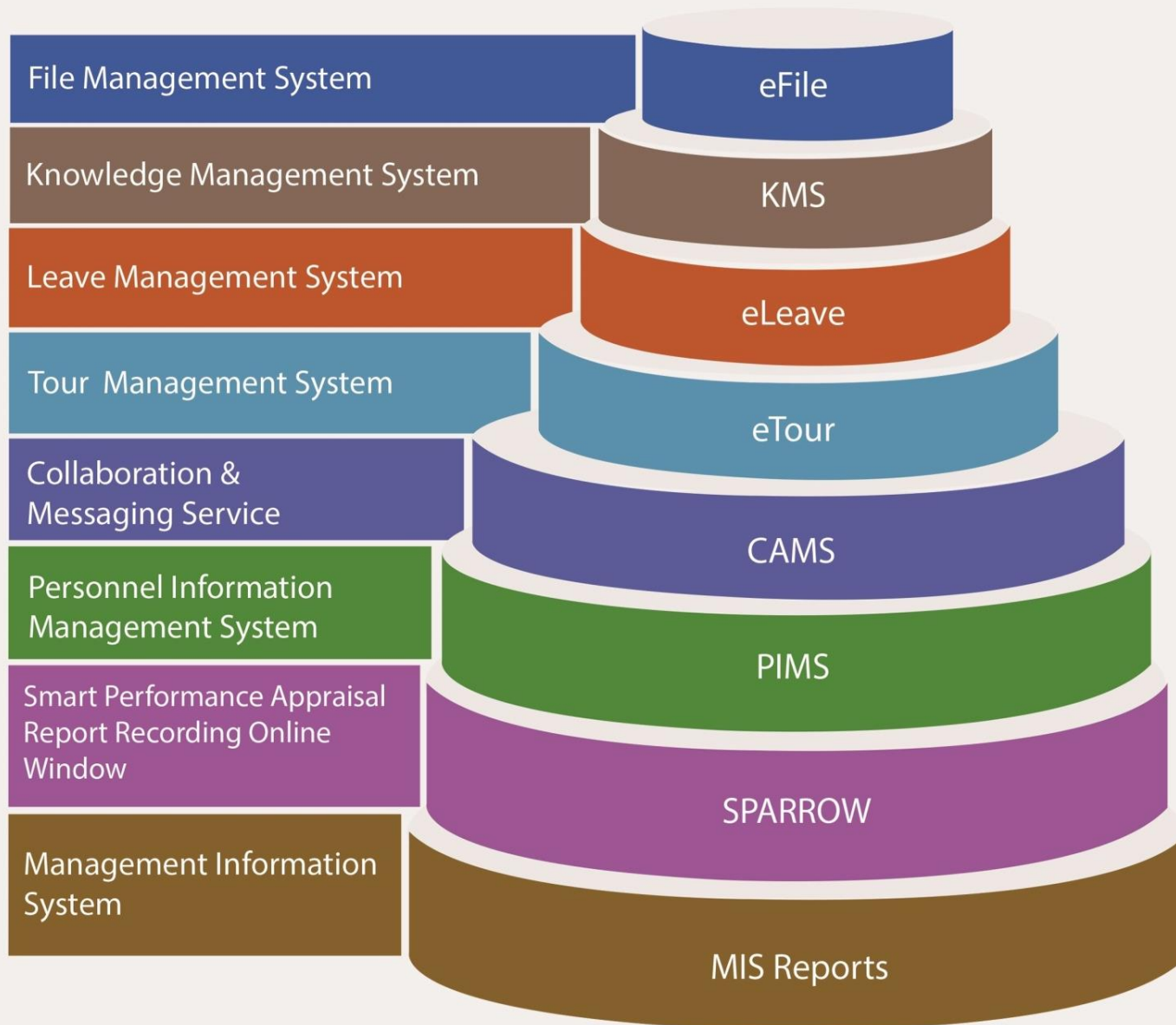


Transform the government work culture and ethics



Promote innovation by releasing staff energy and time from unproductive procedures

eOffice Product Suite



eoffice

A DIGITAL WORK PLACE SOLUTION

eOffice has been designed in sync with the needs of a modern Government and has been conceived as the instrument for the Next Generation Government.

eFILE

FILE MANAGEMENT SYSTEM

eLEAVE

LEAVE MANAGEMENT SYSTEM

eTOUR

TOUR MANAGEMENT SYSTEM

PIMS

PERSONNEL INFORMATION
MANAGEMENT SYSTEM

KMS

KNOWLEDGE MANAGEMENT SYSTEM

CAMS

COLLABORATION & MESSAGING SERVICE

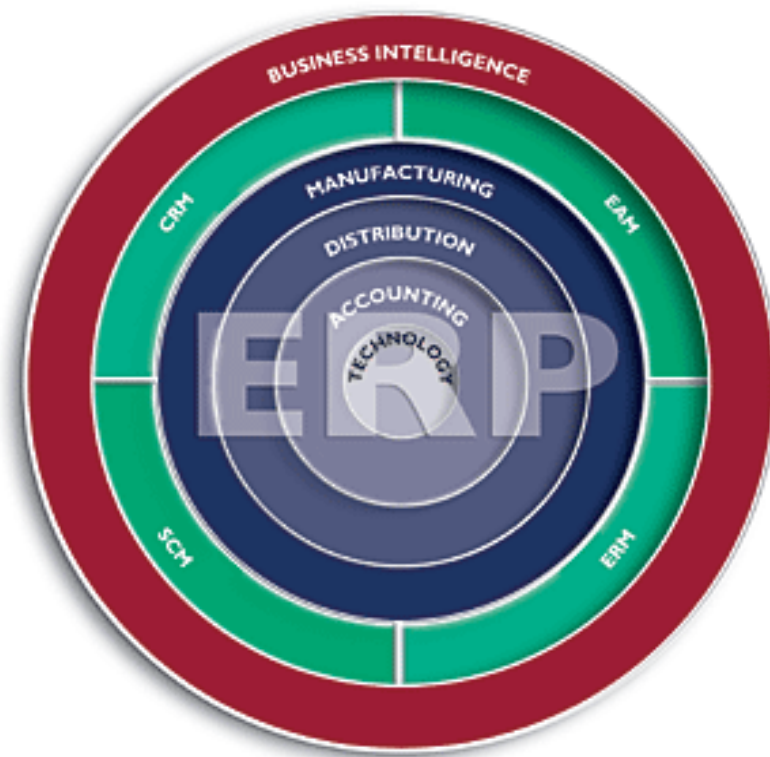


ERP

- A single system integrated seamlessly rather than many incompatible stand-alone systems
- Enterprise Resource Planning (ERP) software are packages which allows information to flow through a organisation
 - Financial and Accounting information
 - Human Resource information
 - Supply Chain Information
 - Customer Information
- SAP and ORACLE Applications are leading ERP software

Enterprise Computing contd.

- With ERP as an information infrastructure, add-on solutions for
 - Supply Chain Management (SCM)
 - Customer Relationship management (CRM)
 - Enterprise Asset Management (EAM)
 - Employee Relationship Management (ERM)
 - Business Intelligence



About PFMS

Public Financial Management System (PFMS)

- PFMS a web based application is an online management information and decision support system for the plan schemes of the government of India. The purpose of this system is to track and monitor fund disbursement and utilization under Plan Schemes on real time basis.
- **PFMS** is being implemented by the Office of the Controller General of Accounts (CGA), MoF in technical collaboration with NIC.

PFMS Objectives

- Tracking of flow of funds to the lowest level of implementation.
- On line information of bank balances to facilitate “just-in-time” provision of funds to implementing agencies.
- E-Payment to ultimate beneficiaries.
- Decision Support System for all levels of programme managers.
- Dissemination of relevant information to citizens.
- Enhance transparency and accountability in public expenditure.

Modules to be implemented

Modules developed by PFMS for stakeholders as per the Union Cabinet above mandate are as under:

I. Fund Flow Monitoring

- (a) Agency registration
- (b) Expenditure management and fund utilization through PFMS EAT (Expenditure-Advance-Transfer modules)
- (c) Accounting Module for registered agencies
- (d) Treasury Interface
- (e) Fund tracking for State schemes

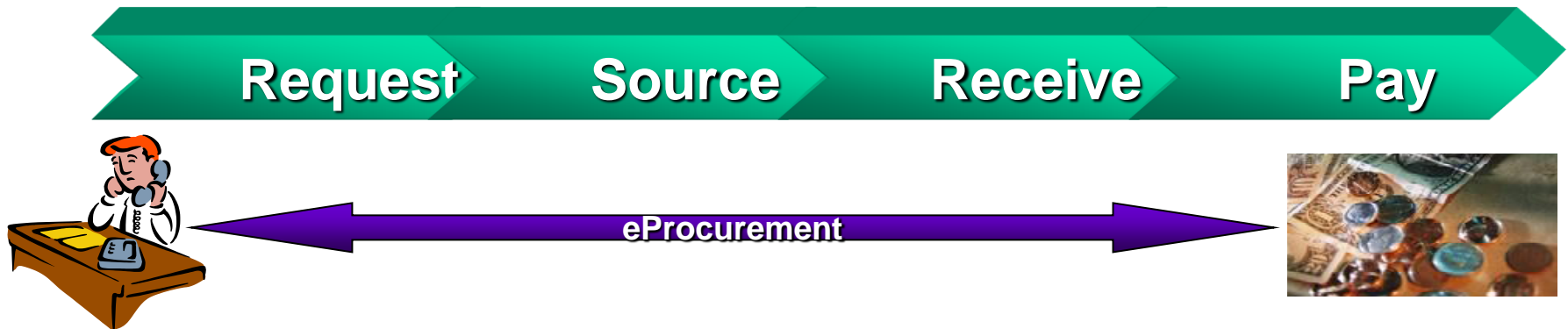
II. Direct Benefit Transfer DBT modules

- (a) PAO to beneficiaries (b) Agency to beneficiaries
- (c) State treasuries to beneficiaries

III. Interfaces for Banking

- (a) CBS (b) India Post (c) RBI
- (d) NABARD & Cooperative Banks

What is eProcurement



Doing procurement activities electronically over Internet with vendors/ suppliers.

- eTenders
- eForward auctions
- eReverse auctions
- eCatalogues



Tendering phases

- Pre-Qualification
- Discovery
- Negotiation
- Contract Formation
- Delivery / Performance / Settlement
- Enforcement and Recourse



E-Tendering

- The automation of the full life-cycle of traditional purchasing processes (indent to receipt of goods), using web based tools



Value addition of e- Procurement

- Demand aggregation
- Bundling and supplier aggregation
- Optimal vendor selection
- Innovative dynamic auctions
- Multi-attribute decision support
- Better spend analysis
- Vendor performance analysis



Reverse Auctions

- On-line real time dynamic auctions between a buying organisation and a group of pre-qualified suppliers
- Competition to supply goods or services with clearly defined specs and terms and conditions
- Dynamic bidding on the Internet using specialised software by bidding lower and lower prices
- Bidding usually lasts an hour



GIS

- A **geographic information system (GIS)** is a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data
- BHUVAN
- http://bhuvan.nrsc.gov.in/bhuvan_links.php
- Geotagging of assets

- Indian Regional Navigation Satellite System developed by ISRO for India
 - Standard Positioning Service
 - Restricted Service
- Applications
 - Terrestrial, Aerial and Marine Navigation
 - Disaster Management
 - Vehicle tracking and fleet management
 - Integration with mobile phones
 - Precise Timing
 - Mapping and Geodetic data capture
 - Terrestrial navigation aid for hikers and travellers
 - Visual and voice navigation for drivers



Recent trends

- Social media
- Mobile solutions
- Cloud computing
- E-Gov Apps

What is Social Media?

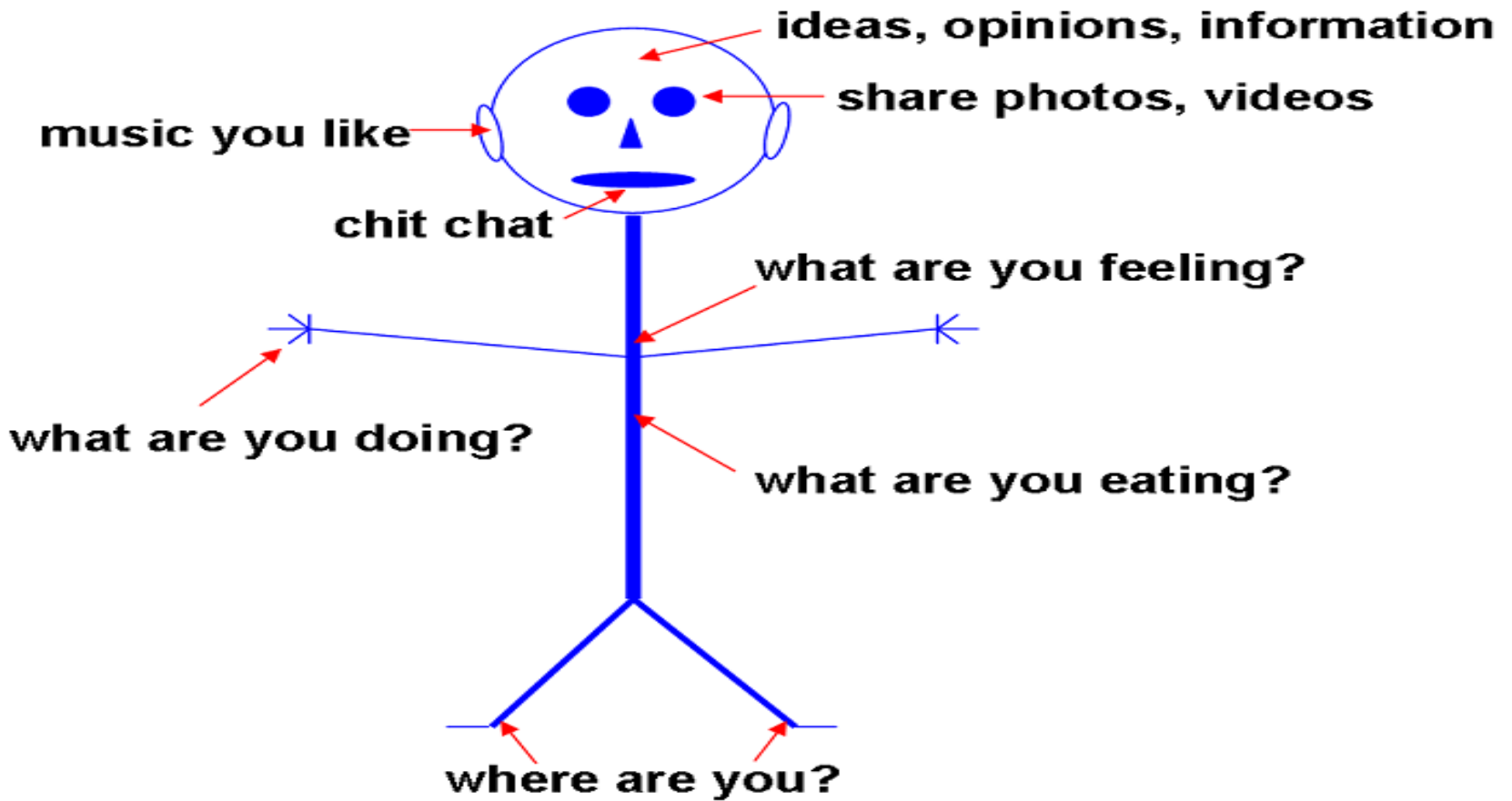
Social media refers to online services that allow people to publicly create, share, and discuss information

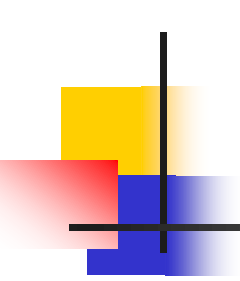
Social media services include, but are not limited to:

- Blogs
- Social networks such as Facebook and MySpace
- Video and photo sharing sites such as YouTube and Flickr
- Microblogging services such as Twitter
- Social bookmarking services such as Digg and Delicious



What Interactions Do You Want from Social Media?



- 
-
- Demo of india.gov.in
 - Demo of mygov.in



Mobility

- Today personal computing devices have gone ahead of enterprise devices
- Employees and other users want the same ease and flexibility in the enterprise applications
- 4 G – Reliance Jio and others
- 5G – 5th generation telecom expected in India by 2020



Cloud Computing

- Cloud Computing
 - SaaS
 - PaaS
 - IaaS
- Virtualisation



Cloud computing in E-Govt

- Meghraj project – GI Cloud
- Personal cloud
- Link to e-Gov Appstore
<http://apps.nic.in/catalogs>



Critical success factors

- High level political support and leadership
- Strengthened institutional capacity
- Public accountability
- Citizen engagement
- Adequate e-govt programmes
- ICT Infrastructure
- Education

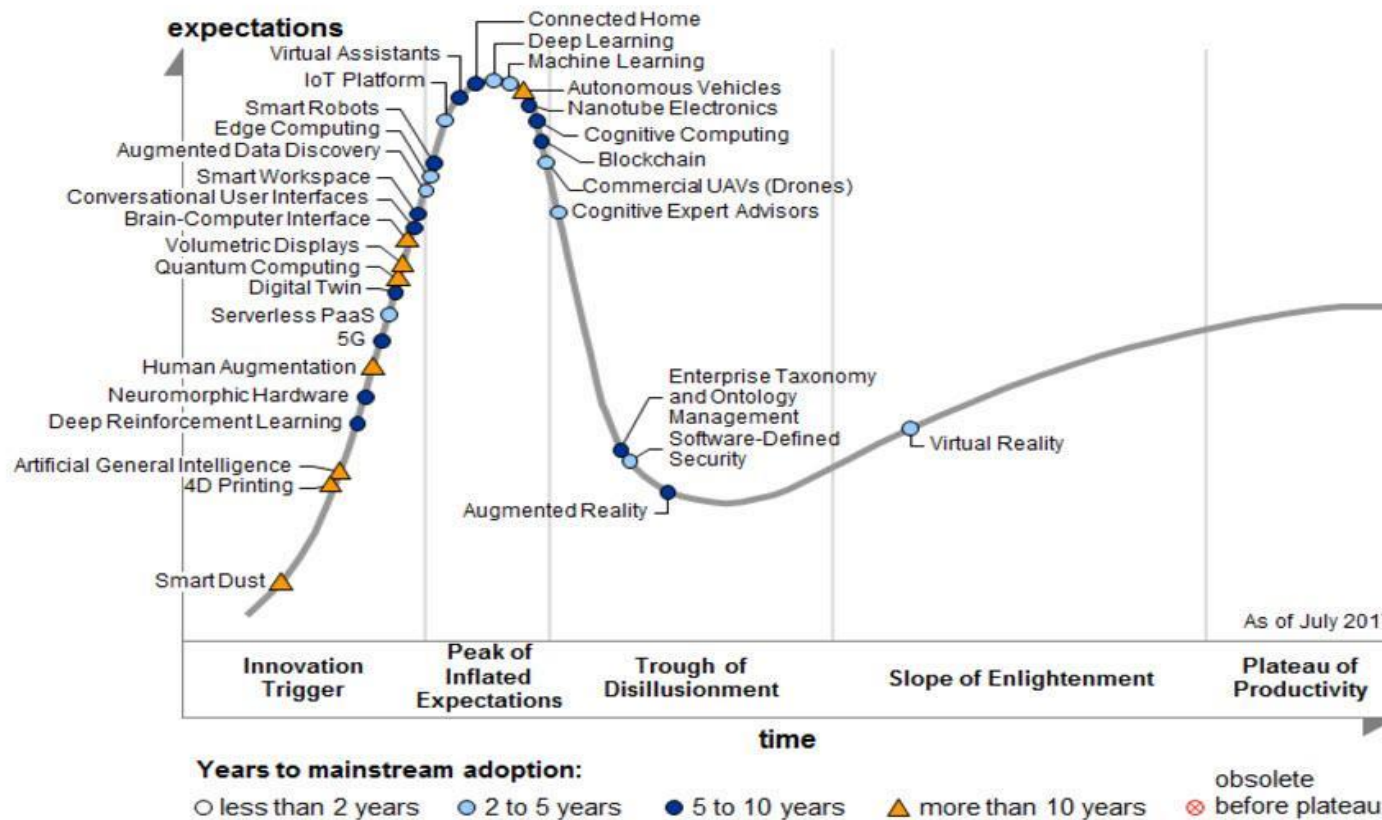


Big Data

- Enormous data from the transactions across organisation needs to be
 - Stored
 - Analysed
 - Presented
- SAP B.O based Dashboard
- SAP HANA – High availability analytics

Gartner's Hype Cycle

Hype Cycle for Emerging Technologies, 2017



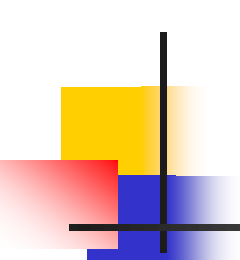
Note: PaaS = platform as a service; UAVs = unmanned aerial vehicles

Source: Gartner (July 2017)



Technologies of next decade

- Artificial Intelligence
- Internet of Things
- Robots
- 3D Printing
- Autonomous cars
- Blockchains



Artificial Intelligence

Machine Learning

Deep Learning

The subset of machine learning composed of algorithms that permit software to train itself to perform tasks, like speech and image recognition, by exposing multilayered neural networks to vast amounts of data.

A subset of AI that includes abstruse statistical techniques that enable machines to improve at tasks with experience. The category includes deep learning

Any technique that enables computers to mimic human intelligence, using logic, if-then rules, decision trees, and machine learning (including deep learning)



Some applications of AI

- Speech recognition
- Handwriting recognition
- Image recognition
- Intelligent robots



Internet of Things

- Internet of Things is simply a concept wherein machines and objects are connected via the Internet
- Google Nest Home Automation device
- HapiFork for eating habits
- Beam Tooth brush – brushing history
- Lechal smart shoe
- OTIS Service video



Blockchain

- A blockchain is a tamper-evident, shared digital ledger that records transactions in a public or private peer-to-peer network. Distributed to all member nodes in the network, the ledger permanently records, in a sequential chain of cryptographic hash-linked **blocks**, the history of asset exchanges that take place between the peers in the network.
- All the confirmed and validated transaction blocks are linked and chained from the beginning of the chain to the most current block, hence the name **blockchain**. The blockchain thus acts as a single source of truth, and members in a blockchain network can view only those transactions that are relevant to them.



Applications of Blockchain

- Cryptocurrencies
- Electronic Health records
- Land records
- International trade and financing